

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF AGRICULTURE.

BULLETIN NO. 135.

Analyses of  
Concentrated Commercial Feeding Stuff,

BY

Wm. Frear, Ph. D.

FROM

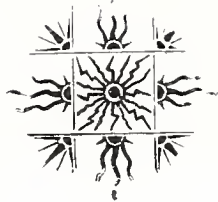
Samples Collected by the Department of Agriculture of  
Pennsylvania in 1904.



1905.

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WM. STANLEY RAY,  
STATE PRINTER OF PENNSYLVANIA,  
1905.



no 135-140

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LETTER OF TRANSMITTAL.

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State College, Centre County, Pa.

April 28, 1905.

Hon. N. B. Critchfield, Secretary.

State Department of Agriculture, Harrisburg, Pa.:

Dear Sir: I have the honor to submit herewith a report of the results obtained in the examination of the official samples of cattle-foods received from the Department Sampling Agent for the year 1904.

Very respectfully,

WM. FREAR,

Chemist.



# ANALYSIS OF CATTLE FOODS.

BY WILLIAM FREAR.

There have been received during the year 1904, under seal, from the official sampling agent of the Department, Mr. George G. Hutchison, 183 samples of cattle foods.

These samples fall under the following classes, according to the brand names by which they were sold:

## Flaxseed Products:

Flax meal, .....	2	
Linseed meal, .....	10	
	<hr/>	12

## Wheat Products:

Bran, .....	1	
Middlings, .....	10	
Red dog flour, .....	3	
Shorts, .....	1	
	<hr/>	17

## Rye Products:

Rye chop, .....	2	
Rye feed, .....	1	
	<hr/>	3

## Barley Products:

Malt sprouts, .....	2	
Brewer's grains, .....	5	
Barley feed, .....	1	
	<hr/>	8

Oat feeds, .....		7
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## Corn Products:

Corn chop, .....	5	
Hominy feeds, .....	7	
Hominy, .....	2	

Gluten feeds, .....	3	
Corn bran, .....	3	
Corn feed meal, .....	1	
	<hr/>	21
Buckwheat middlings, .....	1	
Mixed Feeds of Named Components:		
Corn and oats, .....	21	
Corn, oats and barley, .....	3	
Corn, oats and wheat, .....	2	
Corn, oats and rye, .....	1	
Corn, oats, rye and barley, .....	2	
Rye and oats, .....	3	
Rye and barley, .....	1	
Rye, oats and wheat, .....	1	
Rye and corn, .....	1	
Bran and corn, .....	1	
	<hr/>	36
Chops and Feeds of Unnamed Components:		
Proprietary:		
Non-condimental, .....	23	
Condimental, .....	7	
	<hr/>	30
Miscellaneous:		
Molasses feeds, .....	3	
Animal meals, .....	3	
Alfalfa, .....	3	
Dried beet pulp, .....	1	
	<hr/>	10
Total, .....		183
		<hr/> <hr/>
The representative character of the samples may be judged from the following statement:		
Number of manufacturers and jobbers represented, .....	125	
Number of manufacturers and jobbers from other states, ...	40	
Number of brands represented, .....	166	
Number of places at which samples were selected, .....	61	
Number of dealers from whom samples were taken, .....	135	
		<hr/> <hr/>



The samples were received in glass containers, provided with a metallic screw-cap. Each container was enclosed in a sealed paper carton.

The analytical determinations to which these samples were subjected, were the same as in preceding years: Check determination of moisture and determination, in duplicate, of protein and fat,—the constituents whose percentage the law requires shall be stated upon the package in which the food is sold. The methods employed are the official methods prescribed by the Association of Official Agricultural Chemists. The care of the samples devolved upon Mr. M. S. McDowell, First Assistant, the nitrogen was determined by Messrs. Stallings and Clark, the fat by Messrs. Pingree and Clark, and the moisture by Mr. H. D. Edmiston.

The samples were also submitted to microscopic examination by Mr. R. O. Brooks and the writer.

The results of these examinations are arranged, for convenience of reference, in the following tables:

- I. Linseed products.
- II. Wheat products.
- III. Rye products.
- IV. Barley products.
- V. Oat products.
- VI. Corn products.
- VII. Mixed feeds of named constituents.
- VIII. Mixed feeds whose ingredients are not named:
  - [I]. Proprietary brands.
    - (a). Non-condimental.
    - (b). Condimental.
  - [II]. Brands not proprietary.
- IX. Miscellaneous feeds.

The data belonging to a given table are arranged in alphabetical order according to the name of the manufacturer.

Points of special interest relating to any group are discussed in pages following the tables.

Comments upon the foregoing results will be confined to the more salient points.



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ANALYSES  
OF  
FEED STUFFS.  
1904.

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TABLE I.--LINSEED PRODUCTS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
17	American Linseed Co., Chicago, Ill.,	Cleveland Flax Meal,	Manheim,	Manheim Milling Co.
115	American Linseed Co., New York,	Old Process Oil Meal,	Newport,	W. H. Kepner.
158	Armstrong-McKelvey Meal Co., Pittsburg, Pa.,	Oil Cake Meal,	Pittsburg,	Lawrence Mills Feed Co.
128	Egl. Dunwoody & Co., Philadelphia, Pa.,	Flaxseed Meal,	Philadelphia,	P. K. Daly.
41	Flint Milling Co., Milwaukee, Wis.,	Old Process Oil Meal, Green Oval Brand,	Kennett Square,	C. G. Gauthrop Co., Ltd.
46	Metzgar Seed and Oil Co., Toledo, O.,	Old Process Oil Meal,	New Stanton,	Jas. Stanton & Sons.
9	Midland Linseed Co., Minneapolis, Minn.,	Old Process Ground Linseed,	New Holland,	E. M. Rutter & Co.
43	National Lead and Oil Co., Pittsburg, Pa.,	Oil Cake Meal,	Greensburg,	Jno. W. Pollins Co.
36	Geo. S. Snyder, Agent, Hatfield, Pa.,	Linseed Meal,	Lansdale,	A. C. Gotshall.
10	Sprecker & Gauss, Agents, Lancaster, Pa.,	Oil Cake Meal,	New Holland,	A. B. Groff.
48	Thompson & Co., Allegheny, Pa.,	Oil Meal,	Scottsdale,	Campbell & Hepler.
127	Wright & Hill, Chicago, Ill.,	Pure Old Process Linseed Meal,	Philadelphia,	J. F. Jones.

TABLE I.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
17	American Linseed Co., Chicago, Ill.,	38.00	35.00	1.00	2.47	.....	
115	American Linseed Co., New York	32.00	31.00	5.70	6.79	\$32.50	
158	Armstrong-McKelvey Meal Co., Pittsburg, Pa.,	.....	33.13	.....	8.36	30.00	
128	Egl. Dunwoody & Co., Philadelphia, Pa.,	.....	25.81	.....	28.81	6c lb.	
41	Flint Milling Co., Milwaukee, Wis.,	32.00	30.56	5.00	7.49	.....	
46	Metzgar Seed and Oil Co., Toledo, O.,	.....	32.75	.....	7.63	.....	
9	Midland Linseed Co., Minneapolis, Minn.,	32.00	33.43	5.50	8.01	.....	
43	National Lead and Oil Co., Pittsburg, Pa.,	32.00	36.25	5.00	6.33	.....	
36	Geo. S. Snyder, Agent, Hatfield, Pa.,	.....	35.44	.....	2.14	.....	
10	Sprecker & Gauss, Agents, Lancaster, Pa.,	.....	36.06	.....	7.12	.....	
48	Thompson & Co., Allegheny, Pa.,	32.00	33.38	5.50	7.51	.....	
127	Wright & Hill, Chicago, Ill.,	.....	33.69	.....	6.29	6c lb.	

TABLE II.—WHEAT PRODUCTS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
35	S. Stewart, Morris, Minn., .....	BRAN. Bran. ....	Halifax, .....	A. M. Pike Est.
117	Berge-Crittenden, Milwaukee, Wis., .....	Badger Middlings, .....	Newport, .....	W. H. Kepner.
34	Blank & Gotshall, Sunbury, Pa., .....	Middlings, .....	Geigertown, .....	J. A. Fenstermacher.
133	Cycuch Bros. Co., Erie, Pa., .....	Middlings, .....	Lock Haven, .....	A. Simons' Sons.
119	Daisy Roller Mills, Milwaukee, Wis., .....	Dairy Middlings, .....	Duncannon, .....	Sylvester S. Sheller.
156	Keystone Commercial Co., Pittsburg, Pa., .....	Middlings, .....	Pittsburg, .....	G. W. Gavraed.
57	John I. Pepperday, Latrobe, Pa., .....	Middlings, .....	Latrobe, .....	John I. Pepperday.
118	Pittsburg-Washburn Flour Milling Co., .....	Daisy Middlings, .....	Duncannon, .....	Sylvester S. Sheller.
56	Wm. Schomaker & Co., Greensburg, Pa., .....	Middlings, .....	Latrobe, .....	K. and L. Goede.
50	Sheffield-King Milling Co., Minneapolis, Minn., .....	Fine Middlings, .....	Hummelstown, .....	Jos. Buckholder.
149	Toledo Grain and Milling Co., Toledo, O., .....	No. 2 White Middlings, .....	Punxsutawney, .....	M. H. Smith.
53	Elder & Eckbert, Lewistown, Pa., .....	Shorts, .....	Lewistown, .....	Elder & Eckbert.
7	American Cereal Co., Akron, O., .....	WHEAT FEED. Buckeye Wheat Feed, .....	Hummelstown, .....	Brownstone Store Co., Ltd.
99	American Cereal Co., Akron, O., .....	Buckeye Wheat Feed, .....	Bellwood, .....	Irvin & Wray.
145	American Cereal Co., Akron, O., .....	Buckeye Wheat Feed, .....	Punxsutawney, .....	T. E. Zettler.
118	Pillsbury-Washburn Flour Milling Co., Minneapolis, Minn., .....	Red Dog Flour, .....	Altoona, .....	T. M. Biddle.
106	Sleepy Eye Milling Co., Sleepy Eye, Minn., .....	Red Dog Flour, .....	Curwensville, .....	Fred. J. Dyer & Co.

TABLE II.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
35	S. Stewart, Morris, Minn.,	.....	15.13	.....	4.69	.....	Contains a little wild buckwheat.
BRAN.							
117	Berge-Crittenden, Milwaukee, Wis.,	.....	19.00	.....	5.69	\$25.00	Much bran.
34	Blank & Gotshall, Sunbury, Pa.,	.....	14.88	.....	4.62	.....	Considerable bran.
136	Crouch Bros. Co., Erie, Pa.,	15.00	15.25	4.50	4.27	32 00	
119	Daisy Roller Mills, Milwaukee, Wis.,	.....	19.06	.....	5.00	27 00	Considerable bran.
156	Keystone Commercial Co., Pittsburg, Pa.,	.....	15.50	.....	4.80	.....	Largely bran.
57	John I. Pepperday, Latrobe, Pa.,	.....	13.63	.....	2.59	32 00	Contains some bran.
118	Pillsbury-Washburn Flour Milling Co., Minneapolis, Minn.,	.....	17.50	.....	4.74	30 00	Considerable bran.
56	Wm. Schomaker & Co., Greensburg, Pa.,	.....	16.75	.....	4.43	28 00	Much bran.
4	Sheffield-King Milling Co., Minneapolis, Minn.,	.....	17.88	.....	4.93	.....	Contains a corn product.
149	Toledo Grain and Milling Co., Toledo, O.,	.....	12.75	.....	5.94	29 00	
SHORTS.							
53	Elder & Eckbert, Lewistown, Pa.,	.....	11.88	.....	4.22	25 00	Contains considerable corn product and some buckwheat in addition to wheat.
WHEAT FEED.							
7	American Cereal Co., Akron, O.,	17.75	13.81	4.70	4.06	.....	Much dust-room material.
99	American Cereal Co., Akron, O.,	17.75	14.88	4.70	4.27	30 00	Largely bran.
145	American Cereal Co., Akron, O.,	17.75	14.06	4.70	4.42	24 00	
RED DOG FLOUR.							
59	T. M. Biddle, Altoona, Pa.,	.....	18.50	.....	4.22	26 56	Very little bran.
106	Sleepy Eye Milling Co., Sleepy Eye, Minn.,	.....	15.63	.....	2.66	24 00	No bran.

TABLE III.—RYE PRODUCTS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
102 144	RYE CHOP. Geo. W. Smith, Clearfield, Pa., ..... Toledo Grain and Milling Co., Toledo, O., .....	Pure Rye Chop, ..... Rye Chop, .....	Clearfield, ..... Punxsutawney, .....	Geo. W. Smith, Weiss & Bro.
73	RYE FEED. P. C. Kanno & Co., Milwaukee, Wis., .....	Rye Feed, .....	Martinsburg, .....	Klepser Bros.



TABLE III.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
102	RYE CHOP. Geo. W. Smith, Clearfield, Pa., ..... Toledo Grain and Milling Co., Toledo, O., .....	.....	9.69	.....	2.08	\$32.00	
114		.....	11.06	.....	2.17	37.00	
73	RYE FEED. P. C. Kanno & Co., Milwaukee, Wis., .....	.....	15.19	.....	3.34	24.00	

TABLE IV.—BARLEY PRODUCTS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
23 126	MALT SPROUTS. Chapin & Co., (Shippers), Philadelphia, Pa., ..... Harvey Raeny & Son, Chicago, Ill., .....	Malt Sprouts, ..... Malt Sprouts, .....	Sinking Springs, ..... Philadelphia, .....	Wm. F. Krick, Egl. Dunwoody & Co.
84 82 83 85 154	DRIED BREWERS' GRAIN. Cambria Brewery, Johnstown, Pa., ..... Johnstown Dry Grains Co., Johnstown, Pa., ..... Johnstown Dry Grains Co., Johnstown, Pa., ..... Johnstown Dry Grains Co., Johnstown, Pa., ..... Johnstown Dry Grains Co., Johnstown, Pa., .....	Brewers' Grains, ..... Dried Grains, ..... Dried Grains, ..... Dried Grains, ..... Dried Grains, .....	Johnstown, ..... Johnstown, ..... Johnstown, ..... Johnstown, ..... Johnstown, .....	Johnstown Dry Grains Co. Johnstown Dry Grains Co. Johnstown Dry Grains Co. Johnstown Dry Grains Co. Johnstown Dry Grains Co.
61	BARLEY FEED. Pioneer Cereal Co., Akron, O., .....	Barley Dairy Feed, .....	Altoona, .....	C. Hauser & Son.

TABLE IV.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Pound.	Guaranteed.	Pound.		
22	MALT SPROUTS. Chapin & Co., (Shippers), Philadelphia, Pa., Harvey Raeny & Son, Chicago, Ill.,	.....	25.13	.....	1.35	.....	A little hull present.
126		.....	22.69	.....	1.81	\$18.00	
84	DRIED BREWERS' GRAIN. Cambria Brewery, Johnstown, Pa., Johnstown Dry Grains Co., Johnstown, Pa., Johnstown Dry Grains Co., Johnstown, Pa., Johnstown Dry Grains Co., Johnstown, Pa., Johnstown Dry Grains Co., Johnstown, Pa.,	.....	5.06	.....	1.31	.....	Moisture 80.33 per cent.; Barley malt. Moisture 8.03 per cent.; Barley malt. Moisture 9.78 per cent.; Barley malt. Moisture 4.75 per cent.; Barley malt. Moisture 3.17 per cent.; Barley malt with corn; probably raw corn used in making the mash.
82		.....	23.81	.....	6.71	20.00	
83		.....	22.94	.....	6.06	20.00	
85		.....	24.00	.....	5.52	20.00	
151		23.81	24.38	6.71	4.99	20.00	
61	HARLEY FEED. Pioneer Cereal Co., Akron, O.,	15.00	13.00	4.61	3.80	26.00	Including hull.

TABLE V.—OAT PRODUCTS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
65	OAT FEEDS.			
77	American Cereal Co., Chicago, Ill., .....	Oat Feed (Vim Feed), .....	Altoona, .....	Altoona Feed Mills.
80	American Cereal Co. (Made in Peterborough, Ont.), .....	Vim Oat Feed, .....	York, .....	Ed. B. Johnston & Co.
137	American Cereal Co., Chicago, Ill., .....	Friend Oat Feed, .....	York, .....	John Keasey & Sons.
159	Cream of Oats Co., Ltd., Warren, O., .....	Cream of Oats, .....	Pittsburg, .....	H. Pfohl.
16	Cream of Oats Co., Ltd., Warren, O., .....	Cream of Oats, .....	Pittsburg, .....	C. Horting & Sons.
183	The Great Western Cereal Co., Chicago, Ill., .....	Royal Oat Feed, .....	Ephrata, .....	Ephrata Coal and Lumber Co.
	The Great Western Cereal Co., Chicago, Ill., .....	Royal Oat Feed, .....	Philadelphia, .....	Kugler & Bro.

TABLE V.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Pound.	Guaranteed.	Pound.		
OAT FEEDS.							
65	American Cereal Co., Chicago, Ill., .....	.....	5.75	.....	2.35	\$27 00	
77	American Cereal Co. (Made in Peterborough, Ont.), .....	.....	5.13	.....	2.12	20 00	
80	American Cereal Co., Chicago, Ill., .....	.....	6.38	.....	2.24	19 00	
157	Cream of Oats Co., Ltd., Warren, O., .....	8.00	7.00	3.00	2.89	28 00	Corn and oat product.
159	Cream of Oats Co., Ltd., Warren, O., .....	10.87	6.75	3.52	2.76	24 00	Corn and oat product.
16	The Great Western Cereal Co., Chicago, Ill., .....	7.60	6.75	2.80	3.05	.....	
133	The Great Western Cereal Co., Chicago, Ill., .....	7.60	3.38	2.30	1.51	17 50	

TABLE VI.—CORN PRODUCTS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
	<b>CORN CHOP.</b>			
130	William Cobb, Philadelphia, Pa., .....	Corn Chop, .....	Philadelphia, .....	Wm. H. Peterman.
174	Adam Diehl's Sons, Pittsburg, Pa., .....	Corn Chop, .....	Pittsburg, .....	A. Diehl's Sons.
146	J. Reese Fantall, Punxsutawney, Pa., .....	Corn Chop, .....	Punxsutawney, .....	J. Reese Pantall.
90	Wm. Schomaker & Co., Greensburg, Pa., .....	Corn Chop (Fresh Ground), .....	South Fork, .....	A. D. Strong.
181	Wilkes-Barre Milling Co., Wilkes-Barre, Pa., .....	Corn Chop, .....	Wilkes-Barre, .....	Jno. Ahlbrandt.
	<b>HOMINY FEEDS.</b>			
54	M. F. Barringer, Philadelphia, Pa., .....	Hominy Feed, .....	Lewistown, .....	Elder & Eckbert.
3	Chapin & Co. Agents, Philadelphia, Pa., .....	Hominy Feed, .....	Mechanicsburg, .....	A. B. Harviah.
150	Deutsch & Siefert Co., Milwaukee, Wis., .....	Hominy Feed, .....	Lindsey, .....	Lindsey Milling Co.
51	Hunter Bros. Milling Co., St. Louis, Mo., .....	Hominy Feed, .....	Patterson, .....	Marbeck & Nelson.
33	J. C. Klauder Estate, Philadelphia, Pa., .....	Hominy Feed, .....	Philadelphia, .....	J. C. Klauder Est.
14	Suftern, Hunt & Co., Decatur, Ill., .....	Hominy Feed, .....	Rohrerstown, .....	H. C. Miller.
40	C. W. Wager, Agent and Shipper, Philadelphia, Pa., .....	Hominy Feed, .....	Westgrove, .....	S. K. Chambers & Bro.
	<b>HOMINY.</b>			
15	Chapin & Co. Agents, Philadelphia, Pa., .....	Green Diamond Fine Hominy, .....	Mountville, .....	M. L. Weaver.
18	Jas. L. King, Shipper, Chester, Pa., .....	Hominy, .....	Manheim, .....	Manheim Milling Co.
	<b>GLUTEN FEEDS.</b>			
79	Buffalo Gluten Refining Co., Chicago, Ill., .....	Buffalo Gluten Feed, .....	York, .....	Strayer Bros.
19	Glucose Sugar Refining Co., Chicago, Ill., .....	Gluten Feed, .....	Manheim, .....	D. M. Baker & Co.
13	Wellington Manufacturing Co., Lititz, Pa., .....	Gluten Feed, .....	Lititz, .....	Aaron G. Heishey.
	<b>CORN BRAN.</b>			
132	Glucose Manufacturing Co., Chicago, Ill., .....	Corn Bran, .....	Philadelphia, .....	Fred. J. Lemont.
175	H. R. Jordan, Pittsburg, Pa., .....	Corn Bran, .....	Allegheny, .....	Wm. Fischer.
28	W. J. Koch, Agent and Shipper, Philadelphia, Pa., .....	Corn Bran, .....	Phoenixville, .....	Harry Sloyer.
	<b>CORN FEED MEAL.</b>			
58	American Cereal Co., Akron, O., .....	Corn Feed Meal, .....	Derry, .....	J. O. Nieely.

TABLE VI.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
130	CORN CHOP.						
174	William Cobb, Philadelphia, Pa.,	.....	7.81	.....	3.47	\$25 00	Starch grains distorted.
146	Adam Diehl's Sons, Pittsburg, Pa.,	.....	9.33	.....	2.54	25 00	Starch grains distorted.
83	J. Reese Pantall, Punxsutawney, Pa.,	.....	9.06	.....	4.09	27 00	
181	J. C. Klauder Estate, Philadelphia, Pa.,	.....	8.25	.....	3.53	30 00	
	Wilkes-Barre Milling Co., Wilkes-Barre, Pa.,	.....	8.00	.....	1.13	24 00	
54	HOMINY FEEDS.						
3	M. F. Barringer, Philadelphia, Pa.,	.....	9.31	.....	4.43	26 00	Contains some corn cob.
150	Chapin & Co., Agents, Philadelphia, Pa.,	10.31	10.13	7.98	8.57	.....	
51	Deutsch & Siefert Co., Milwaukee, Wis.,	.....	10.63	.....	6.73	28 00	
90	Hunter Bros. Milling Co., St. Louis, Mo.,	11.02	10.44	7.79	7.78	25 00	
14	Wm. Schomaker & Co., Greensburg, Pa.,	10.83	9.18	8.59	1.73	.....	Musty when received.
40	Suffern, Hunt & Co., Decatur, Ill.,	11.02	10.13	7.70	7.98	.....	
	C. W. Wager, Agent and Shipper, Philadelphia, Pa.,	.....	10.19	.....	6.92	.....	
15	HOMINY.						
18	Chapin & Co., Agents, Philadelphia, Pa.,	.....	9.56	.....	7.97	.....	Like hominy feed.
	Jas. L. King, Shipper, Chester, Pa.,	.....	11.56	.....	8.53	.....	Like hominy feed.
79	GLUTEN FEEDS.						
19	Buffalo Gluten Refining Co., Chicago, Ill.,	28.00	23.00	3.00	2.56	26 00	Some cob present.
13	Glucose Sugar Refining Co., Chicago, Ill.,	28.00	22.56	2.00	2.63	.....	
	Wellington Manufacturing Co., Litzitz, Pa.,	.....	17.38	.....	9.79	.....	
132	CORN BRAN.						
175	Glucose Manufacturing Co., Chicago, Ill.,	.....	9.50	.....	3.13	24 00	
26	H. R. Jordan, Pittsburg, Pa.,	.....	11.56	.....	2.64	22.00	
	W. J. Koch, Agent and Shipper, Philadelphia, Pa.,	.....	9.18	.....	8.13	.....	
58	CORN FEED MEAL.						
	American Cereal Co., Akron, O.,	.....	10.06	.....	5.51	30 00	Coarse.

TABLE VII.—MIXED FEEDS OF NAMED COMPONENTS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
<b>CORN AND OATS.</b>				
47	American Cereal Co., Akron, O., .....	Victor Corn and Oats Feed, .....	Mt. Pleasant, .....	J. J. Spence, .....
81	McDermott, Wertz & Co., Johnstown, Pa., .....	Corn and Oats Chop, .....	Johnstown, .....	G. Bostert & Son, .....
123	Calvin Eiters & Co., Eberly Mills, Pa., .....	Corn and Oats Chop, .....	Harrisburg, .....	Calvin Eiters & Son, .....
137	John W. Eshelman, Lancaster, Pa., .....	Corn and Oats Chop, .....	Lancaster, .....	E. N. Hunsecker, .....
89	Forseman-Kelso Milling Co., Flemington, Pa., .....	Corn and Oats Chop, .....	Lock Haven, .....	A. Simons & Son, .....
162	E. G. Gramling, South Fork, Pa., .....	Corn and Oats Chop, .....	South Fork, .....	E. G. Gramling, .....
105	Great Western Cereal Co., Chicago, Ill., .....	Excelsior Corn and Oats Feed, .....	Erie, .....	W. J. Carrol, .....
21	C. F. Hayes, Curwensville, Pa., .....	Pure Corn and Oats Chop, .....	Curwensville, .....	C. T. Hile, .....
49	Hoffer & Garman, Harrisburg, Pa., .....	Corn and Oats Chop, .....	Harrisburg, .....	Hoffer & Garman, .....
116	John B. Isett, Spruce Creek, Pa., .....	Standard Corn and Oats Chop, .....	Warriorsmark, .....	G. R. Lehman, .....
70	W. H. Kepner, Newport, Pa., .....	Corn and Oats, .....	Newport, .....	W. H. Kepner, .....
52	Kell Long, Connellsville, Pa., .....	Corn and Oats Chop, .....	Connellsville, .....	Kell Long, .....
103	Manbeck & Nelson, Patterson, Pa., .....	Corn, Oats and Hominy Chop, .....	Patterson, .....	Manbeck & Nelson, .....
148	Nickel Plate Mills, Erie, Pa., .....	Corn and Oats (one-half each), .....	Erie, .....	W. J. Carrol, .....
153	J. Reese Pantall, Punksutawney, Pa., .....	Corn and Oats, .....	Punksutawney, .....	J. Reese Pantall, .....
124	F. V. Perry, Coalport, Pa., .....	Corn and Oats Chop, .....	Gallitzin, .....	Mountain Supply Co., .....
6	J. H. Sheasley, Harrisburg, Pa., .....	Corn and Oats, .....	Harrisburg, .....	C. F. Gohl, .....
92	H. Stauffer, Union Deposit, Pa., .....	Corn and Oats Chop, .....	Hummelstown, .....	Chas. Holler, .....
29	Toledo Grain and Milling Co., Toledo, O., .....	Corn and Oats Chop, .....	Conemaugh, .....	F. B. Custer & Bro., .....
55	H. G. Weinberger, Friedensburg, Pa., .....	Corn and Oats Chop, .....	Reading, .....	Strunk & Moyer, Ltd., .....
	W. G. White, Mattern Mills, Pa., .....	Corn and Oats Chop, .....	Lewistown, .....	G. M. White, .....
<b>CORN, OATS AND BARLEY.</b>				
122	American Cereal Co., Chicago, Ill., .....	Corn, Oats and Barley, .....	Marysville, .....	S. W. Clouse & Co., .....
42	American Cereal Co., Toledo, O., .....	Corn, Oats and Barley Feed, .....	Greensburg, .....	John W. Pollins Co., .....
98	American Cereal Co., Toledo, O., .....	Corn, Oats and Barley, .....	Bellwood, .....	John Wentzell & Co., .....
<b>RYE AND OATS.</b>				
60	T. M. Biddle, Altoona, Pa., .....	Rye and Oats Chop, .....	Altoona, .....	T. M. Biddle, .....
74	Klepser & Bro., Martinsburg, Pa., .....	Rye and Oats, .....	Martinsburg, .....	Klepser & Bro., .....
63	Spanogic & Yeager, Lewistown, Pa., .....	Rye and Oats Chop, .....	Altoona, .....	Henry H. Landon, .....



TABLE VII.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
CORN AND OATS.							
47	American Cereal Co., Akron, O.,	9.00	8.69	4.00	4.13	.....	Oat feed and a corn product.
81	McDermott, Wertz & Co., Johnstown, Pa.,	.....	9.75	.....	3.89	\$28 00	
123	Calvin Etters & Co., Eberly Mills, Pa.,	.....	9.00	.....	4.21	28 00	
137	John W. Eshelman, Lancaster, Pa.,	.....	9.31	.....	1.26	.....	
137	Foreman-Kelso Milling Co., Flemington, Pa.,	.....	11.25	.....	3.33	27 00	
89	E. G. Gramling, South Fork, Pa.,	.....	8.19	.....	3.17	27 00	Wheat feed present.
162	Great Western Cereal Co., Chicago, Ill.,	9.00	7.50	4.00	3.66	20 00	Oat feed and corn.
105	C. F. Haves, Curwensville, Pa.,	.....	8.75	.....	3.86	27 00	Corn product, oat and wheat feeds.
21	Hoffer & Garman, Harrisburg, Pa.,	.....	9.94	.....	0.95	.....	Musty when received.
49	John B. Isett, Spruce Creek, Pa.,	.....	9.50	4.38	4.17	.....	
116	W. H. Kepner, Newport, Pa.,	10.43	10.06	.....	3.84	30 00	
70	Kell Long, Connelville, Pa.,	.....	9.00	.....	2.52	24 00	A little cob.
52	Manbeck & Nelson, Patterson, Pa.,	.....	9.25	.....	5.01	26 00	Chiefly corn.
163	Nickel Plate Mills, Erie, Pa.,	.....	9.81	.....	3.65	26 00	
148	J. Reese Pantall, Punxsutawney, Pa.,	.....	9.94	.....	4.37	27 00	
153	F. V. Perry, Coalport, Pa.,	.....	10.25	.....	4.15	30 00	
124	J. H. Sheasley, Harrisburg, Pa.,	8.00	9.44	4.00	4.13	28 00	Corn by-product.
6	H. Stauffer, Union Deposit, Pa.,	.....	9.93	.....	3.68	.....	
92	Toledo Grain and Milling Co., Toledo, O.,	.....	8.50	.....	3.37	26 00	Chiefly corn.
29	H. G. Weinberger, Friedensburg, Pa.,	.....	10.25	.....	0.44	.....	Musty when received; contains wheat product.
55	W. G. White, Mattern Mills, Pa.,	.....	10.00	.....	1.64	26 00	Musty when received.
CORN, OATS AND BARLEY.							
122	American Cereal Co., Chicago, Ill.,	13.00	10.06	5.00	4.54	25 00	
42	American Cereal Co., Toledo, O.,	13.00	12.31	5.00	5.16	.....	
98	American Cereal Co., Toledo, O.,	13.00	10.63	5.00	4.68	32 00	
RYE AND OATS.							
60	T. M. Biddle, Altoona, Pa.,	9.50	13.28	1.40	4.88	26.06	Considerable corn product present.
74	Klepser & Bro., Martinsburg, Pa.,	7.00	11.88	3.00	4.66	24 00	A good deal of corn present.
63	Spanogle & Yeager, Lewistown, Pa.,	.....	11.50	.....	2.51	26 00	Contains some corn.

TABLE VII (2).—MIXED FEEDS OF NAMED COMPONENTS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
101	F. M. Cardon, Clearfield, Pa., ..... RYE AND BARLEY.	Rye and Barley, .....	Clearfield, .....	F. M. Cardon.
103	J. W. Eberts & Co., Clearfield, Pa., ..... RYE, OATS AND WHEAT.	Rye, Wheat and Oats, .....	Clearfield, .....	J. W. Eberts & Co.
121	J. B. Brunner, Marysville, Pa., ..... RYE AND CORN.	Rye and Corn, .....	Marysville, .....	H. E. Keel & Co.
50 107	C. Graziar, Warriorsmark, Pa., ..... CORN, OATS AND WHEAT. Harry A. Reedy, Wallaceton, Pa., .....	Corn, Wheat and Oats, .....	Warriorsmark, .....	F. K. Mattern.
75	S. F. Dubbs, Spring Forge, Pa., ..... CORN, OATS AND RYE.	Corn, Oats and Wheat, .....	Wallaceton, .....	Harry A. Reedy.
97 138	CORN, OATS AND RYE. CORN, OATS, RYE AND BARLEY. John Fuoss, Bellwood, Pa., ..... Furst Bros., Cedar Spring, Pa., .....	Corn, Oats and Rye, .....	York, .....	Eyster & Rauhauser.
173	BRAN AND CORN. George Englemohr, Pittsburg, Pa., .....	Corn, Oats, Rye and Barley, .....	Bellwood, .....	John Fuoss.
		Corn, Cats, Rye and Barley, .....	Lock Haven, .....	Scott Bros.
		Mixed Feed, Bran and Corn, .....	Pittsburg, .....	Geo. Englemohr.

TABLE VII (2).—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
101	F. M. Cardon, Clearfield, Pa., .....	.....	15.88	.....	4.09	30 00	
	RYE AND BARLEY.						
103	J. W. Eberts & Co., Clearfield, Pa., .....	.....	10.69	.....	2.41	28 00	
	RYE, OATS AND WHEAT.						
121	J. B. Brunner, Marysville, Pa., .....	.....	11.50	.....	2.35	30 00	Considerable oat hull.
	RYE AND CORN.						
50	C. Graziar, Warriorsmark, Pa., .....	9.00	10.94	3.00	3.62	28 00	
107	Harry A. Reedy, Wallaceton, Pa., .....	10.81	9.69	5.27	6.45	24 50	
	CORN, OATS AND WHEAT.						
75	S. F. Dubbs, Spring Forge, Pa., .....	.....	9.50	.....	3.11	32 00	
	CORN, OATS AND RYE.						
97	John Fuoss, Bellwood, Pa., .....	.....	8.81	.....	3.73	30 00	Little barley and rye.
138	Furst Bros., Cedar Springs, Pa., .....	.....	11.56	.....	3.97	30 00	
	CORN, OATS, RYE AND BARLEY.						
173	George Englemohr, Pittsburg, Pa., .....	.....	11.50	.....	3.86	27 00	Coarse.
	BRAN AND CORN.						

TABLE VIII.—MIXED FEEDS MADE FROM MATERIALS NOT NAMED IN BRAND.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
[I.] PROPRIETARY BRANDS.				
A.—Non-Condimental.				
62	American Cereal Co., Akron, O.	Shumaker Stock Feed.	Altoona.	Henry H. Landon.
114	American Cereal Co., Akron, O.	Shumaker Stock Feed.	Osceola Mills.	McLarren Bros.
161	American Cereal Co., Chicago, Ill.	F. S. Stock Feed.	Erie.	W. J. Carrol.
165	American Cereal Co., Chicago, Ill.	F. S. Stock Feed.	Erie.	Geo. L. Segel.
167	American Cereal Co., Chicago, Ill.	F. S. Stock Feed.	Erie.	Geo. L. Segel.
96	American Cereal Co., Akron, O.	Quaker Dairy Feed.	Windber.	J. E. Crisman.
166	American Cereal Co., Chicago, Ill.	American Poultry Food.	Erie.	Geo. L. Segel.
178	J. W. Biles Co., Cincinnati, O.	Union Grains.	Wilkes-Barre.	Miner-Hillard Milling Co.
5	Chapin & Co. Agents, Philadelphia, Pa.	Apex Flakes.	Hummelstown.	Jos. Buckholder.
93	Flint Milling Co., Milwaukee, Wis.	Apex Stock Food.	Mechanicsburg.	A. B. Harviah.
38	Flint Milling Co., Milwaukee, Wis.	Apex Stock Food.	Johnstown.	M. J. Boyle.
39	H-O. Co., Buffalo, N. Y.	Horse Feed.	Media.	C. F. Williamson.
104	H-O. Co., Buffalo, N. Y.	Dairy Feed.	Media.	C. F. Williamson.
129	H-O. Co., Buffalo, N. Y.	H-O. Feed.	Philadelphia.	Frank Richard.
104	R. D. Hubbard, Mankoto, Mich.	Superlative Patent.	Clearfield.	Ross Woods & Co.
76	Husted Milling and Elevator Co., Buffalo, N. Y.	Monarch Chop Feed.	York.	Edward E. Johnston Co.
95	Imperial Grain and Milling Co., Toledo, O.	Premium Chop.	Windber.	L. B. Reeser & Co.
109	Indiana Milling Co., Terre Haute, Ind.	Jersey Mixed Feed.	Tyrone.	Tyrone Milling Co.
1	Merchants' Distilling Co., Terre Haute, Ind.	High Grade Dairy Feed.	Mechanicsburg.	A. B. Harviah.
67	Spanogle & Yeager, Lewistown, Pa.	Dexter Horse Chop.	Altoona.	Spanogle & Yeager.
69	Toledo Grain and Milling Co., Toledo, O.	Keystone Chop.	Connellsville.	Dull & Co.
91	Toledo Grain and Milling Co., Toledo, O.	Keystone Chop.	Connellsville.	F. B. Custer & Bro.
112	Wm. Wolf, Phillipsburg, Pa.	Wolf Mixed Chop.	Connellsville.	Wm. Wolf.
			Philipsburg.	
171	Barker, Moore & Main Condimental Co., Philadelphia, Pa.	Horse, Cattle and Poultry Powder.	Warriorsmark.	J. R. Lehman.
44	J. W. Earwell, Waukegan, Ill.	Blatchford Calf Meal.	Greensburg.	Westmoreland Supply Co.
87	J. W. Earwell, Waukegan, Ill.	Blatchford Calf Meal.	Johnstown.	Reitz & Good.

TABLE VIII.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
[I.] PROPRIETARY BRANDS.							
A.—Non-Condimental.							
62	American Cereal Co., Akron, O., .....	13.00	10.63	5.00	4.33	\$25 00	Corn, wheat and oats.
114	American Cereal Co., Akron, O., .....	13.00	10.19	5.00	4.54	30 00	Corn, wheat and oats.
161	American Cereal Co., Chicago, Ill., .....	13.00	10.06	5.00	3.08	25 00	Corn, wheat and oats.
165	American Cereal Co., Chicago, Ill., .....	13.00	10.69	5.00	5.23	25 00	Corn products, oat and wheat feeds.
167	American Cereal Co., Chicago, Ill., .....	13.00	10.40	5.00	4.59	25 00	Corn, wheat and oats.
96	American Cereal Co., Akron, O., .....	14.00	13.50	3.50	3.43	23 00	Wheat product and oat feed.
163	American Cereal Co., Chicago, Ill., .....	14.00	12.31	4.50	6.08	32 00	Chiefly corn product with oat feed.
176	J. W. Eiles Co., Cincinnati, O., .....	33.00	26.88	11.00	8.97	24 00	Distillers' grains—barley and corn.
5	Chapin & Co., Agents, Philadelphia, Pa., .....	34.00	28.50	12.00	14.13	.....	Distillers' grains—barley and corn.
2	Flint Milling Co., Milwaukee, Wis., .....	16.00	14.81	4.07	5.01	.....	Corn, wheat and oats with malt.
93	Flint Milling Co., Milwaukee, Wis., .....	16.00	14.06	4.30	4.37	25 00	Dried malt, corn, oat and wheat products.
38	H-O. Co., Buffalo, N. Y., .....	12.00	12.94	4.50	4.31	.....	Corn product with oat feed and a little linseed meal.
39	H-O. Co., Buffalo, N. Y., .....	18.00	16.56	4.50	4.82	.....	Corn product with oat feed and cotton-seed meal.
129	H-O. Co., Buffalo, N. Y., .....	12.00	11.88	4.50	5.18	28 00	Wheat feed, oats, corn and probably a little cotton-seed meal.
104	R. D. Hubbard, Mankoto, Mich., .....	.....	15.50	.....	4.81	25 00	Wheat bran.
76	Husted Milling and Elevator Co., Buffalo, N. Y., .....	8.09	8.44	4.16	3.99	24 00	Corn and oat feed.
95	Imperial Grain and Milling Co., Toledo, O., .....	.....	7.38	.....	2.93	24 00	Corn and oat products.
109	Indiana Milling Co., Terre Haute, Ind., .....	12.45	10.87	3.20	2.92	27 00	Wheat feed and corn cob meal.
1	Merchants' Distilling Co., Terre Haute, Ind., .....	.....	28.18	.....	14.68	.....	Distillers' grains—barley and corn.
67	Spanogle & Yeager, Lewistown, Pa., .....	.....	11.63	.....	4.39	27 00	Corn, wheat and oats products.
69	Toledo Grain and Milling Co., Toledo, O., .....	9.537	8.75	5.73	3.19	25 00	Corn, wheat and oats products.
91	Toledo Grain and Milling Co., Toledo, O., .....	.....	9.56	.....	3.80	26 00	Corn, wheat and oats products.
112	Wm. Wolf, Phillipsburg, Pa., .....	11.69	11.00	6.48	4.06	26 00	Corn, wheat and oats products.
B.—Condimental.							
171	Barker, Moore & Main Medical Co., Philadelphia, Pa., ..	.....	27.50	.....	8.51	333 34	
44	J. W. Barwell, Waukegan, Ill., .....	25.00	22.81	5.00	3.76	.....	
87	J. W. Barwell, Waukegan, Ill., .....	26.00	22.56	5.00	4.36	4c lb.	

TABLE VIII (2).—MIXED FEEDS MADE FROM MATERIALS NOT NAMED IN BRAND.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
170	Dr. Hess & Clark, Ashland, O.	Poultry Panacea.	Warriorsmark.	J. R. Lehman.
172	Albert Dickinson Co., Chicago, Ill.	Poultry Feed "Crescent."	Lancaster.	Sprecher & Gauss.
172	Pratt Food Co., Philadelphia, Pa.	Pratt Poultry Food	Pittsburg.	F. Baxmyer & Co.
164	Security Stock Food Co., Minneapolis, Minn.	Security Stock Food.	Erie.	W. J. Carrol.
[ILL.] NON-PROPRIETARY BRANDS.				
66	Altoona Feed Mills, Altoona, Pa.	Horse Chop.	Altoona.	Altoona Feed Mills.
64	D. M. Bare & Co., Roaring Springs, Pa.	Horse Chop.	Altoona.	J. Morgan.
94	M. G. Boyle, Johnstown, Pa.	Fresh Ground Chop.	Johnstown.	M. J. Boyle.
131	Buffalo Cereal Co., Buffalo, N. Y.	Horse Feed.	Philadelphia.	Fred. L. Lemont.
109	F. M. Cardon, Clearfield, Pa.	Mixed Chop.	Clearfield.	F. M. Cardon.
25	Chapin & Co., Agents and Shippers, Philadelphia, Pa.	Distillers' Grains.	Reading.	A. C. Wertz & Bro.
142	Morris L. Claster, Lock Haven, Pa.	Mixed Feed.	Lock Haven.	Morris L. Claster.
160	N. Seymour Crouch (Miller), Erie, Pa.	Chop.	Erie.	N. Seymour Crouch.
111	Duke Copelin, Philipsburg, Pa.	Mixed Chop.	Philipsburg.	Duke Copelin.
71	John S. Detwiler, Pennsylvania, Pa.	Chop.	New Haven.	Rhodes & Smith.
126	J. K. Everhart, Millerstown, Pa.	Chop.	Duncannon.	Duncannon Iron Co.
113	C. T. Fryberger, Philipsburg, Pa.	Mixed Chop.	Philipsburg.	C. T. Fryberger.
141	Furst Bros., Cedar Springs, Pa.	Mixed Chop.	Lock Haven.	Holmes Bros. & Co.
72	A. Gaddis & Co., Uniontown, Pa.	Fresh Ground Chop.	Uniontown.	A. Gaddis & Co.
28	Wm. Hoch, Gablesville, Pa.	"C" Chop.	Boyerstown.	E. and J. W. Leaver.
184	Keystone Mills, Wilkes-Barre, Pa.	Mixed Chop.	Wilkes-Barre.	Keystone Mills.
139	Knecht Bros., Parvin, Pa.	Chop.	Lock Haven.	J. Brown & Sons.
151	Lindsey Milling Co., Lindsey, Pa.	Mixed Chop No. 1.	Lindsey.	Lindsey Milling Co.
152	Lindsey Milling Co., Lindsey, Pa.	Mixed Chop.	Lindsey.	Lindsey Milling Co.
30	J. J. Miller, Myerstown, Pa.	No. 1 Mixed Chop.	Myerstown.	J. J. Miller.
177	Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Mixed Chop.	Wilkes-Barre.	Miner-Hillard Milling Co.
173	Miner-Hillard Milling Co., Wilkes-Barre, Pa.	No. 1 Mixed Chop.	Wilkes-Barre.	Miner-Hillard Milling Co.
88	Phil. W. Poet, Wallacetown, Pa.	No. 2 Mixed Chlp.	Altoona.	Phil. W. Poet.
108	Harry A. Reedy, Wallacetown, Pa.	Cow Feed.	Wallacetown.	Vulcan Trading Co.
180	Robbins Milling Co., Wilkes-Barre, Pa.	Mixed Chop.	Wilkes-Barre.	J. Ahlbrandt.
182	Robbins Milling Co., Wilkes-Barre, Pa.	"B" Chop.	Wilkes-Barre.	Robbins Milling Co.
189	Royce-Coon Grain Co., Bowling Green, O.	"A" Chop.	Erie.	A. P. Allen.
		No. 1 Yellow Chop.		



TABLE VIII (2).—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Pound.	Guaranteed.	Pound.		
170	Dr. Hess & Clark, Ashland, O.,	.....	10.38	.....	1.67	333.34	
172	Albert Dickinson Co., Chicago, Ill.,	.....	11.69	.....	4.12	.....	Corn, wheat and oats.
174	Pratt Food Co., Philadelphia, Pa.,	.....	13.38	.....	7.44	.....	Corn and oat feed.
164	Security Stock Food Co., Minneapolis, Minn.,	.....	11.31	.....	9.60	25c pkg.	Corn, wheat and oats.
[III.] NON-PROPRIETARY BRANDS.							
63	Altoona Feed Mills, Altoona, Pa.,	.....	9.25	.....	6.80	27 00	Corn, wheat and oats.
94	D. M. Bare & Co., Roaring Springs, Pa.,	11.00	11.69	5.50	4.50	28 00	Corn, wheat and oats.
131	M. G. Boyle, Johnstown, Pa.,	.....	9.63	.....	3.55	28 00	Corn and oat feed.
100	Buffalo Cereal Co., Buffalo, N. Y.,	12.00	11.06	4.50	4.83	28 00	Corn, wheat and oats.
25	F. M. Cardon, Clearfield, Pa.,	10.08	11.69	3.89	4.18	25 00	Corn, wheat and oats.
142	Chapin & Co., Agents and Shippers, Philadelphia, Pa.,	.....	19.94	.....	7.50	.....	Barley, corn, some buckwheat.
160	Morris L. Claster, Lock Haven, Pa.,	.....	10.44	.....	4.11	27 00	Corn, oats and bran.
111	N. Seymour Crouch (Miller), Erie, Pa.,	12 00	7.88	5.00	3.27	22 00	Corn and oat products.
71	Duke Copelin, Philipsburg, Pa.,	7.81	10.00	5.48	5.90	26 00	Corn product, wheat and oats.
130	John S. Detwiler, Pennsylvania, Pa.,	.....	8.31	.....	2.95	28 00	Corn and oat feed.
113	J. K. Everhart, Millerstown, Pa.,	.....	10.44	.....	4.00	35 00	Corn, wheat and oats.
141	C. T. Fryberger, Philipsburg, Pa.,	8.13	11.50	5.90	5.53	27 50	Corn product with wheat feed.
72	Furst Bros., Cedar Springs, Pa.,	.....	11.00	.....	3.84	30 00	Corn, oats and rye.
28	A. Gaddis & Co., Uniontown, Pa.,	.....	8.94	.....	4.24	23 00	Corn and oats; some eob.
184	Wm. Hoch, Gablesville, Pa.,	.....	10.13	.....	0.55	.....	Corn, oats and wheat.
139	Keystone Mills, Wilkes-Barre, Pa.,	.....	10.06	.....	2.90	24 00	Corn, oats and middlings.
151	Kneek & Bro., Parvin, Pa.,	.....	9.31	.....	3.58	27 00	Corn, oats and middlings.
152	Lindsey Milling Co., Lindsey, Pa.,	.....	10.44	.....	3.19	25 00	Corn products with wheat, oats, barley and rye.
30	Lindsey Milling Co., Lindsey, Pa.,	.....	12.56	.....	7.29	28 00	Corn and wheat middlings.
177	J. J. Miller, Myerstown, Pa.,	.....	9.56	.....	6.65	.....	Corn, oats and wheat.
178	Miner-Hillard Milling Co., Wilkes-Barre, Pa.,	.....	9.38	.....	4.27	26 00	Corn with a little oats.
88	Miner-Hillard Milling Co., Wilkes-Barre, Pa.,	.....	8.56	.....	4.89	24 00	Corn with a little oats.
108	Phil. W. Poet, Altoona, Pa.,	.....	15.63	.....	3.69	25 00	Barley products prominent.
189	Harry A. Reedy, Wallacetown, Pa.,	.....	9.50	.....	5.18	28 00	Corn, wheat and oats.
182	Robbins Milling Co., Wilkes-Barre, Pa.,	.....	9.25	6.31	3.50	24 00	Chiefly corn with oats.
169	Robbins Milling Co., Wilkes-Barre, Pa.,	10.02	9.00	6.36	2.89	24 00	Corn, oats and rye.
139	Royce-Coon Grain Co., Bowling Green, O.,	7.03	7.94	3.39	3.30	27 00	Corn product and oat feed.

TABLE VIII (3).—MIXED FEEDS MADE FROM MATERIALS NOT NAMED IN BRAND.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
179	Millard Scureman, Kingston, Pa., .....	"X" Chop, .....	Wilkes-Barre, .....	J. A. Ahlbrandt.
27	W. P. Shallenberger, New Berlinville, Pa., .....	Mixed Chop, .....	Boyertown, .....	B. M. Yost.
24	Irvin Shaneman, W. Reading, Pa., .....	Mixed Chop, .....	Reading, .....	H. G. Landon & Sons.
45	Jas. Stanton & Sons, New Stanton, Pa., .....	Chop, .....	New Stanton, .....	Jas. Stanton & Sons.
68	Toledo Grain and Milling Co., Toledo, O., .....	"A" Yellow Chop, .....	Cannellsville, .....	Dull & Co.
143	Toledo Grain and Milling Co., Toledo, O., .....	"A" Mixed Chop, .....	Punxsutawney, .....	Weiss Bros.
110	Tyrone Milling Co., Tyrone, Pa., .....	Mixed Chop, .....	Tyrone, .....	Tyrone Milling Co.
140	A. F. Wentz, Mackeyville, Pa., .....	Chop, .....	Lock Haven, .....	Elmer E. Wentz.
32	H. G. Weinberger, Oley, Pa., .....	Mixed Chop, .....	Reading, .....	Fryermuth & Bro.
31	Wertz Milling Co., Reading, Pa., .....	Mixed Chop, .....	Reading, .....	Wertz Milling Co.
133	Wilkes-Barre Milling Co., Wilkes-Barre, Pa., .....	No. 2 Chop, .....	Wilkes-Barre, .....	Wilkes-Barre Milling Co.



TABLE VIII (3).—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
179	Millard Scureman, Kingston, Pa., .....	10.30	10.56	4.74	4.07	\$24 00	Corn and middlings.
27	W. P. Shallenberger, New Berlinville, Pa., .....	.....	9.50	.....	0.48	.....	Corn, wheat and oats.
24	Irvin, Shaneman, Reading, Pa., .....	.....	16.81	.....	2.36	.....	Corn, wheat and oats.
45	Jas. Stanton & Sons, New Stanton, Pa., .....	.....	9.56	.....	0.35	.....	Chiefly corn, with a little oats.
68	Toledo Grain and Milling Co., Toledo, O., .....	8.18	8.25	3.43	3.22	25 00	Corn and oats; a little cob present.
143	Toledo Grain and Milling Co., Toledo, O., .....	8.88	7.44	3.85	3.45	27 50	Corn, oats, wheat and barley.
110	Tyrone Milling Co., Tyrone, Pa., .....	10.19	10.00	5.50	3.35	26 00	Corn, wheat and oats.
140	A. F. Wentz, Mackeyville, Pa., .....	.....	9.00	.....	3.98	29 00	Corn, oats and middlings.
32	H. G. Weinberger, Oley, Pa., .....	.....	12.06	.....	0.51	.....	Chiefly corn and wheat.
31	Wertz Milling Co., Reading, Pa., .....	.....	11.19	.....	4.27	.....	Chiefly corn and wheat; some oats.
183	Wilkes-Barre Milling Co., Wilkes-Barre, Pa., .....	10.01	9.06	8.01	2.95	24 00	Corn, oats and middlings.

TABLE IX.--MISCELLANEOUS.

Station number.	Manufacturer.	Brand Name.	Place of Selection.	Name of Dealer.
86	Alma Sugar Co., Alma, Mich., DRIED BEET PULP.	Dry Beet Pulp.	Johnstown.	Reitz & Good.
134	.....	Alfalfa Meal.	Hartstown.	J. E. Campbell.
135	.....	Alfalfa Meal.	Hartstown.	J. E. Campbell.
168	W. A. Devenport, Petersboro, N. Y., ALFALFA MEAL.	Alfalfa Meal.	Erie.	Geo. L. Segel.
11	American Poultry Food Co., York, Pa., ANIMAL MEAL.	Ground Beef Scrap.	Lancaster.	Sprecher & Gauss,
20	Darling & Co., Chicago, Ill.,	Beef Meal.	Waynesboro.	Gilbert & Gordon.
23	Spratt's (American) Patent, Ltd., Newark, N. J.,	Crissel,	Reading.	H. G. Landis Sons.
147	J. Reese Pantall, Punxsutawney, Pa., BUCKWHEAT MIDDINGS.	Buckwheat Middlings.	Punxsutawney.	J. Reese Pantall.
37	Dresden Sugar Co., Ltd., Dresden, Ont., MOLASSES FEEDS.	Molasses Cattle Food.	Lansdale.	F. H. Souder & Son.
125	E. P. Miller, Milwaukee, Wis.,	Molasses Grain.	Philadelphia.	Egt. Dunwoody & Co.
78	E. P. Miller, Milwaukee, Wis.,	Molasses Feed.	York.	F. Loucks & Son.

TABLE IX.—Continued.

Station number.	Manufacturer.	Composition (Per cent.)				Selling price.	Remarks.
		Protein.		Fat.			
		Guaranteed.	Found.	Guaranteed.	Found.		
86	DRIED BEET PULP. Alma Sugar Co., Alma, Mich., .....	.....	8.75	.....	0.83	20 00	
134	ALFALFA MEAL. .....	.....	11.81	.....	1.81	32 00	
135	.....	.....	11.75	.....	1.43	32 00	
168	W. A. Devenport, Petersboro, N. Y., .....	.....	11.44	.....	1.30	.....	
11	ANIMAL MEAL. American Poultry Food Co., York, Pa., .....	.....	56.19	.....	17.36	.....	
20	Darling & Co., Chicago, Ill., .....	45.00	51.00	10.00	8.59	.....	
23	Spratt's (American) Patent, Ltd., Newark, N. J., .....	62.00	57.29	17.50	15.18	.....	
147	BUCKWHEAT MIDDINGS. J. Reese Pantall, Punxsutawney, Pa., .....	.....	28.75	.....	8.30	25 00	A little hull present.
27	MOLASSES FEEDS. Dresden Sugar Co., Ltd., Dresden, Ont., .....	8.81	9.50	1.46	0.77	.....	Beet pulp basis.
125	E. P. Miller, Milwaukee, Wis., .....	.....	16.31	.....	2.75	20 00	Probably barley basis, brewers' or distillers' grains.
78	E. P. Miller, Milwaukee, Wis., .....	.....	20.31	.....	3.13	21 00	Malt and malt sprout basis.

## LINSEED PRODUCTS.

No. 128, "flaxseed meal," differs from the remaining samples of this group in that it has not had its fat removed. Its protein is, therefore, necessarily lower than that of the linseed meals. Of the latter, the low fat percentages in Nos. 17 and 36 indicate them to be "new process" meals; i. e., such as have had their fat removed by some fat solvent, instead of by hot pressure, the "old process." The legally required guaranty was missing in one-half these cases; where it was given, the fat found fully equalled the amount guaranteed, but the protein in Nos. 17 and 41 was distinctly deficient. Selling prices were gathered only in the latter part of the year. The two "pound prices" quoted, show a liberal allowance for loss of time and material in such retail sales.

The microscopic examination of these samples showed them all to be pure.

## WHEAT PRODUCTS.

There are a few points of special interest in connection with this table. The middlings show a wide range of variation in composition, viz:—excluding No. 149—protein 13.63 to 19.06 per cent.; fat, 2.59 to 5.69. That is, in one sample the buyer may receive one-half more protein than in another, or twice as much fat.

The proportions of bran to flour are roughly shown in the remarks accompanying the analytical data. As is well known, much that is sold as "middlings" better deserves the name of "bran."

The very high percentage of protein in No. 117, would suggest that the material is a "red dog" flour, but the microscope showed a large proportion of bran to be present. On the other hand, No. 106 contains too little of the flour from the neighborhood of the bran, to make a typical "red dog" flour.

The wheat feeds, all products made by the American Cereal Co., Akron, O., are found to be very deficient as compared with their guaranties; somewhat low as to fat, but very deficient in protein. This company writes, respecting these and other foods found below guaranty: "Our Science Department makes frequent analyses of all our feeds and is able to show a far better average in protein; in fact, *our average is substantially up to guaranties.* We do not want our feeds to show any deficiency and will take steps to correct the same."

The italics are ours and possibly require no comment.

Two cases of adulteration appear in this group of products, Nos. 149 and 53. The quantity of corn product introduced is, in each case, enough to distinctly depress the protein percentage. The buck-

wheat in No. 53 is very possibly wild buckwheat, introduced as part of the screenings.

### RYE PRODUCTS.

No. 73 differs from the other samples of this group, much of the floury part of the grain having been removed. Microscopic examinations indicates that each sample is true to name.

### BARLEY PRODUCTS.

The malt sprouts are both of good quality.

The wet brewers' grains, when dried until but 6 per cent. of moisture remained, contained 24.25 per cent. of protein and 6.28 per cent. of fat. No. 154 is distinctly deficient in fat.

### OAT PRODUCTS.

The oat feeds consist largely of oat hulls with some oat dust and small, broken grains. Sample No. 133 is almost entirely devoid of oat grain.

These samples all fell much below the guaranties given for them, except the fat in No. 16.

Cream of Oats, is not exclusively an oat product, but appears to be a mixture of oat feed with some corn by-product. This material, too, as represented by these official samples, is far from reaching the guaranty.

### CORN PRODUCTS.

The same fact appears here as in preceding years, viz: a very great loss of fat when the sample is attacked by mould, as in case of No. 33. It is very possible that the low fat in No. 181 is due to the same cause, although mustiness is not obvious in this case. Great pains were taken to analyze the samples promptly after their arrival at the laboratory, to diminish danger of deterioration before analysis.

The name "hominy" is evidently used, in Nos. 15 and 18, as an abbreviation for "hominy feed," a by-product in the manufacture of hominy for human food.

In the case of corn bran, Nos. 132 and 175 are either devoid of the chit or germ, or else the corn oil has been extracted from them. No. 26 approaches more nearly the usual composition for corn bran.

In this group also, the general tendency to guarantee more than is given, appears. Especially is it true in case of the gluten feeds, 19 and 79. The Wellington Mfg. Co.'s product, No. 10, is far more starchy than most gluten feeds.

## MIXED FEEDS OF NAMED COMPONENTS.

In this group, too, there are several samples whose fat has been almost entirely destroyed by mould, being in that condition when received at the laboratory.

As has been remarked in earlier reports, there appear in this group, supposably made up, except No. 173, of mixtures of the chopped products from whole grains, many instances of substitution of some by-products of the named grains, rather than the total material obtained by chopping or milling the entire grain. So that wheat and rye feeds are substituted for wheat and rye chops, hominy feed or gluten feed for corn chop and oat feed for oats. There are also cases where products from other grains than those named appear.

Mixed feeds containing such substitutes are subject to the legal requirement of a guaranty, in contrast with genuine products made by the grinding or chopping of entire grains exclusively of the kind named in the brand of the feed, for goods of the latter class no guaranty being required. The majority of manufacturers apparently overlook the legal requirements with respect to feeds of this class not made entirely by the chopping of mixed whole grains.

On the other hand, the presence of corn cob, rice hulls and similar adulterations has not been observed.

It is noteworthy that in not a single case does the composition of the "corn and oats" chops come to the calculated composition of a mixture of equal parts of average dent corn and average oats, viz: 11 per cent. protein and 5 per cent. fat.

The barley and rye sample, No. 101, has a very high protein and fat content for a mixture of chopped grains, whose average protein is 11.3 per cent. each; and whose average fat percentages are 1.9 and 2.7 per cent. respectively. The tissues seen under the microscope belong, however, to the grain named.

## MIXED FEEDS FROM MATERIALS NOT NAMED IN THE BRANDS.

I. Proprietary: Non-Condimental Brands: Guaranties are duly given for most of these brands, but in the majority of instances the guaranties are not lived up to; thus, of 18 guaranties for protein, but three are substantially fulfilled; in case of fat, the showing is much better, ten out of 18 guaranties being fulfilled, an excess sometimes being found. This is the more interesting from the fact already mentioned, that in cases of mustiness—especially when corn is present—the fat is rapidly destroyed.

II. Condimental Brands: The examination to which these mate-



rials were subjected, was chiefly designed to show the nature of the principal ingredients; it is not claimed to have been exhaustive:

Barker, Moore and Main Medical Co's Horse, Cattle and Poultry Powder:—Chiefly composed of linseed meal, charcoal, sulphur, common salt, probably epsom salts, alum, and a very little pungent, aromatic material.

J. W. Barwell's Blatchford's Calf Meal:—Contains carob bean, flaxseed, bean and wheat feed.

Correction.—On page 32, of Bulletin No. 122, issued in 1904, the statement is erroneously made that this feed contains "corn bran;" this was due to a clerical error; the reading should have been "carob bean."

Hess and Clark's Poultry Panacea:—Wheat feed, corn, charcoal, salt, sulphur, epsom salts, carbonate of lime, with Venetian red as a coloring matter.

Albert Dickinson Co's Crescent Poultry Feed:—Wheat and corn products, millet seed and carbonate of lime.

Pratt Food Co's Pratt's Poultry Food:—Wheat feed, corn product, fungugreek, sulphur and Venetian red.

Security Stock Food Co's Security Stock Food:—Wheat (dust-room product rich in wheat hairs), corn, ginger, salt, a little of a bitter aromatic, probably a trace of asafoetida, Venetian red.

II. Non-Proprietary Brands:—Of forty brands, fifteen were accompanied by guaranties. In one-third of the cases, the protein guaranties were not fulfilled; in two-thirds, those for fat.

## COST OF PROTEIN AND FAT IN COMMERCIAL FEEDING STUFFS.

The selling prices reported this year by the sampling agents, make it possible to compare the amount of protein and fat purchasable for a given sum of money. It is to be remembered, of course, that the principal weight of all these foods is composed of the carbohydrates—fiber and nitrogen-free extract; and also that the fiber has probably much less nutritive value than the nitrogen-free extract, and that the pentosans, which constitute much of the nitrogen-free extract in such materials as bran, oat-feed, brewers' and distillers' grains, are of distinctly lower feeding-value than the nitrogen-free extract of chopped grains and middlings, where starch is the chief component of this portion of the food-stuff.

Since, however, commercial feeds are commonly compared and often bought chiefly on the basis of their protein and fat content, it is believed that the following table, in which the number of pounds of protein and fat contained in one dollar's worth of the several

products for which selling prices have been reported, will be of interest. The table is arranged according to the quantities of protein thus purchasable, beginning with the largest amount. In comparing these figures two additional facts should be kept in view: In the majority of cases, the material is represented by a single sample only; also analytical differences corresponding to about 0.6 per cent. of protein are not regarded as excessive divergences between duplicate determinations made on the same material.



TABLE X.—POUNDS OF PROTEIN AND FAT SOLD FOR ONE DOLLAR.

Number.	Feed.	No. of samples analyzed.		
			Protein.	Fat.
	Malt sprouts, .....	1	25.21	2.01
	Dried brewers' grains, .....	4	23.78	5.82
147	Buckwheat middlings, .....	1	23.00	6.64
176	J. W. Biles Co.'s Union Grains, .....	1	22.40	6.73
	Linseed meal, .....	2	20.20	4.77
78	E. P. Miller, Milwaukee, molasses feed, .....	1	19.84	2.93
	Gluten feed, .....	1	17.70	1.97
125	E. P. Miller, Milwaukee, molasses grain, .....	1	16.31	2.75
	Red dog flour, .....	2	13.50	2.72
	Rye feed, .....	1	12.66	2.78
83	Poet, Altoona, corn feed, .....	1	12.50	2.95
104	Hubbard's Superlative Patent, .....	1	12.40	3.85
96	Quaker Dairy Feed, .....	1	11.24	2.98
	Flint's Apex Stock Food, .....	2	11.55	3.75
	Middlings, .....	7	11.23	3.22
	Wheat feed, .....	2	10.70	3.22
	Rye and barley, .....	1	10.59	2.71
	Barley feed, .....	1	10.00	2.92
	Rye and oats, .....	3	9.67	3.17
	Shorts, .....	1	9.50	3.38
100	Cardon, Clearfield, mixed chop, .....	1	9.35	3.34
	Corn bran, .....	2	9.16	2.51
	H. O. Feed, .....	1	8.84	3.20
179	Scureman's "X" chop, .....	1	8.80	3.39
59	Alma Sugar Co.'s dried beet pulp, .....	1	8.75	0.83
152	Lindsey Milling Co.'s, No. 1 mixed chop, .....	1	8.61	5.21
67	Spanogle & Yeager's Dexter horse chop, .....	1	8.61	5.21
	Bran and corn, .....	1	8.52	2.86
112	Wolf's mixed chop, .....	1	8.46	3.02
184	Keystone Mills chop, .....	1	8.38	2.42
64	Bare's horse chop, .....	1	8.35	3.21
151	Lindsey's mixed chop, .....	1	8.35	2.55
109	Indiana Milling Co.'s Jersey Mixed Feed, .....	1	8.05	2.16
	American Cereal Co.'s Schumaker (S. F.) Stock Food, .....	5	7.93	3.37
131	Buffalo Cereal Co.'s horse feed, .....	1	7.90	3.45
	Corn, oats and wheat, .....	2	7.86	3.84
72	Gaddis' "C" chop, .....	1	7.77	3.69
142	Chester's mixed feed, .....	1	7.73	3.04
150	Robbin's "B" chop, .....	1	7.71	2.62
	Alfalfa meal, .....	2	7.71	0.86
	Hominy feed, .....	3	7.69	4.79
111	Copelin's mixed chop, .....	1	7.69	4.44
166	American Cereal Co.'s American Poultry Food, .....	1	7.69	2.81
110	Tyrone Milling Co.'s mixed chop, .....	1	7.69	2.58
113	Fryberger's mixed chop, .....	1	7.67	3.69
	Rye and corn, .....	1	7.67	1.57
	Rye, oats and wheat, .....	1	7.62	1.72
183	Wilkes-Barre Milling Co.'s No. 2 chop, .....	1	7.55	2.46
152	Robbins' "A" chop, .....	1	7.50	2.41
	Corn, oats and barley, .....	1	7.26	3.23
177	Miner-Hillard's No. 1 mixed chop, .....	2	7.22	3.05
	Toledo Grain and Milling Co.'s Keystone Chop, .....	1	7.18	2.25
160	Crouch's chop, .....	1	7.16	2.37
178	Miner-Hillard's No. 2 mixed chop, .....	1	7.13	4.67
70	Husted's Monarch Chop, .....	1	7.03	3.32
	Corn and oats, .....	1	6.99	2.73
139	Kneck's No. 1 mixed chop, .....	1	6.90	2.65
94	Boyle's fresh ground chop, .....	1	6.88	2.89
66	Altoona Feed Mills horse chop, .....	1	6.85	5.04
108	Reedy's mixed chop, .....	1	6.78	3.70
	Corn, oats, rye and barley, .....	1	6.79	2.57
	Corn feed meal, .....	2	6.71	3.71
68	Toledo Grain and Milling Co.'s "A" Yellow Chop, .....	1	6.60	2.58
140	Wentz's chop, .....	1	6.21	2.71
	Corn chop, .....	5	6.15	2.25
95	Imperial Grain and Milling Co.'s Premium chop, .....	1	6.15	2.44
	Rye chop, .....	2	6.02	1.24
120	Everhart's chop, .....	1	5.94	2.29
71	Detwiler's chop, .....	1	5.94	2.11
	Corn, oats and rye, .....	1	5.94	1.94
	Blatchford's calf meal, .....	2	5.92	1.01
169	Royce-Coon Grain Co.'s No. 1 Yellow Chop, .....	1	5.88	2.44
142	Toledo Grain and Milling Co.'s "A" mixed chop, .....	1	5.41	3.51
	Cream of oats, .....	2	5.28	2.18
	Oat feed, .....	4	4.94	1.97
	Barker's Horse, Cattle and Poultry Powder, .....	1	1.65	0.51
	Hess's Poultry Panacea, .....	1	0.62	0.10

